



CHAPTER  
**THREE**

---

AFFECTED ENVIRONMENT  
& ENVIRONMENTAL  
CONSEQUENCES

## **3      AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

### **3.1   INTRODUCTION**

Chapter 3 presents the analysis conducted and identifies potential effects that could occur as a result of implementation of the interim surplus criteria alternatives under consideration. Section 3.1 describes the: 1) structure of the resource sections in this chapter; 2) role of modeling in the analysis; 3) baseline used for measuring potential effects of the alternatives; 4) general approach used for determining potential effects; 5) period of analysis; and 6) environmental commitments associated with interim surplus criteria.

Section 3.2 presents a general discussion of the geographic area within which potential effects of the interim surplus criteria were analyzed, and Section 3.3 describes the modeling methods and general results of Colorado River system modeling. The remaining sections of Chapter 3 present resource-specific analyses of potential effects using information obtained from the modeling.

#### **3.1.1   STRUCTURE OF RESOURCE SECTIONS**

Beginning with Section 3.4, the sections in this chapter each present a general resource category, such as water supply, recreation and aquatic resources. Within each resource category is contained analyses of one or more specific issues identified for consideration through scoping, public review and comment, and internal review. A discussion of the methodology, affected environment and environmental consequences is provided for each issue. Environmental commitments are proposed for impacts to various resource issues as appropriate.

Methodology discussions identify the specific methods used for determining the affected environment and potential environmental consequences of the alternatives. The affected environment discussions then identify the specific context within which the issue being analyzed exists. This includes a discussion of general environmental characteristics associated with each issue, as well as important Colorado River system conditions that may be associated with each issue. Finally, the potential effects of interim surplus criteria compared to baseline conditions (as discussed in more detail below) are presented in the environmental consequences discussions.

#### **3.1.2   USE OF MODELING TO IDENTIFY POTENTIAL FUTURE COLORADO RIVER SYSTEM CONDITIONS**

To determine the potential effects of the interim surplus criteria alternatives, modeling of the Colorado River system was conducted (a complete description of the modeling

procedure is included in Section 3.3). Modeling provides projections of potential future Colorado River system conditions (i.e., reservoir surface elevations, river flows, salinity, etc.). The modeling results allow a comparison of potential future conditions under the various interim surplus criteria alternatives and baseline conditions. As such, much of the analyses contained within this FEIS are based upon potential effects of changed flows and water levels within the Colorado River and mainstream reservoirs.

### **3.1.3 BASELINE CONDITIONS**

As discussed in Chapter 2, the No Action Alternative does not provide consistent specific criteria for determining surplus conditions. As such, it is not possible to precisely model the No Action Alternative. However, in order to provide a reasonable analytical projection of potential future system conditions without interim surplus criteria, a baseline surplus strategy (70R) was utilized. This baseline represents definable surplus criteria based on recent operational decisions. The 70R strategy is based upon recent secretarial operating decisions and was modeled to develop a projection of baseline conditions for comparison with the alternatives in this FEIS.

### **3.1.4 IMPACT DETERMINATION**

The analysis of potential effects for each issue considered is based primarily upon the results of modeling. Following the identification of conditions important to each issue, the potential effects of various system conditions over the general range of their possible occurrence (as identified by the range of modeling output for various parameters) are identified for each issue. The potential effects of the various interim surplus criteria alternatives are then presented in terms of the incremental differences in probabilities (or projected circumstances associated with a given probability) between baseline conditions and the alternatives.

### **3.1.5 PERIOD OF ANALYSIS**

This FEIS addresses interim surplus criteria that would be used during the years 2001 through 2015 for determining whether surplus water would be available during the years 2002 through 2016. Due to the potential for effects beyond the 15-year interim period, the modeling and impact analyses extend through the year 2050. It is important to note that modeling output and associated impact analyses become more uncertain over time as a result of increased uncertainty of future system conditions (including hydrologic conditions), as well as uncertainty with regard to future operational decisions that will affect circumstances within the Colorado River system.

### **3.1.6 ENVIRONMENTAL COMMITMENTS**

As discussed, impacts identified in Chapter 3 are associated with changes in the difference between probabilities of occurrence for specific resource issues under study when comparing the action alternatives to baseline conditions. Reclamation has

determined that most of the potential impacts identified are not of a magnitude that would require specific mitigation measures to reduce or eliminate their occurrence because the small changes in probabilities of occurrence are within Reclamation's current operational regime and authorities under applicable federal law. However, in recognition of potential effects that could occur under baseline conditions or with implementation of the interim surplus criteria alternatives under consideration, Reclamation has developed a number of environmental commitments that would be undertaken if interim surplus criteria are implemented. These commitments are described in relevant resource sections of this Chapter and in Section 3.17.